IN THE CLAIMS:

Claim 1. (Canceled)

Claim 2. (Previously Presented): An early suppression fast response pendent-type fire protection sprinkler suitable for use in accordance with one or more of NFPA 13, NFPA 231 and NFPA 231 C, to protect single row rack storage, double row rack storage and multiple row rack storage having a maximum storage height of 25 feet in a storage area having a maximum ceiling height of 30 feet, with no open containers and no solid shelves, said sprinkler having a K-factor of about 25 and a minimum design flowing pressure of about 15 pounds per square inch, and less than about 40 pounds per square inch, at the most hydraulically remote sprinkler, and further comprising:

a sprinkler body defining an orifice and an outlet for delivering a flow of fluid from a source, and

a deflector mounted with a first surface opposed to flow of fluid from the outlet, said deflector defining at least two reentrant slots disposed in opposition about a deflector axis, said reentrant slots extending from said first surface through said deflector, and said reentrant slots extending from slot openings at an outer peripheral edge of said deflector inwardly from said peripheral edge toward said deflector axis.

Claim 3. (Previously Presented) The early suppression fast response pendent-type fire protection sprinkler of claim 2, 36, 37, or 38, wherein said reentrant slots extend inwardly along reentrant slot centerlines, and each of said reentrant slots has a first width transverse to its reentrant slot centerline in a region of said peripheral edge and a second slot width transverse

to its reentrant slot centerline in a region spaced inwardly, toward said deflector axis, relative to the region of said peripheral edge, said second width being greater than said first width.

Claim 4. (Original) The early suppression fast response pendent-type fire protection sprinkler of claim 3, further comprising an apex element and wherein said deflector is mounted to said apex element and wherein an innermost portion of each of said reentrant slots extends inwardly toward said deflector axis to be no further outward from said deflector axis that an outermost surface of said apex element.

Claim 5. (Original) The early suppression fast response pendent-type fire protection sprinkler of claim 4, wherein said innermost portions of said reentrant slots extend inwardly toward said deflector axis to underlie said apex element, relative to fluid flow direction from said outlet.

Claim 6. (Previously Presented) The early suppression fast response pendent-type fire protection sprinkler of claim 3, wherein said reentrant slot centerlines extend radially outward from said deflector axis.

Claim 7. (Previously Presented) The early suppression fast response pendent-type fire protection sprinkler of claim 2, 36, 37, or 38, wherein said sprinkler is suited for installation with said deflector disposed up to 18 inches below a ceiling.

Claim 8. (Previously Presented) The early suppression fast response pendent-type fire protection sprinkler of claim 2, 36, 37 or 38, wherein said deflector has a thickness measured from said first surface in the direction of fluid flow equal to or greater than about 0.06 inch.

Claim 9. (Previously Presented) The early suppression fast response pendent-type fire protection sprinkler of claim 2, 36, 37, or 38, wherein said reentrant slots comprise a plurality of reentrant slots, said plurality of reentrant slots comprising at least a first type of reentrant slots and a second type of reentrant slots,

reentrant slots of said first type extending from said first surface through said deflector with the slot openings at an outer peripheral edge of said deflector body, each of said reentrant slots of said first type extending inwardly from said peripheral edge, along the reentrant slot centerlines, generally toward said deflector axis, to a first type length,

reentrant slots of said second type extending through said deflector from said first surface, with the slot openings at said peripheral edge of said deflector body, each of said reentrant slots of said second type extending inwardly from said peripheral edge, along the reentrant slot centerlines, generally toward said deflector axis, to a second type length, and

the innermost portions of said reentrant slots of said first type extending inwardly toward said deflector axis to be no further outward from said deflector axis than the outermost surface of said apex element.

Claim 10. (Original) The early suppression fast response pendent-type fire protection sprinkler of claim 9, wherein:

each of said reentrant slots of said first type has a first width transverse to its slot centerline in a region of said peripheral edge and a second width transverse to its slot centerline in a region spaced inwardly, toward said deflector axis, relative to the region of said peripheral edge, the second said width of said first type slots being greater than the first said width of said first type slots, and

each of said reentrant slots of said second type has a first width transverse to its slot centerline in a region of said peripheral edge and a second width transverse to its slot centerline in a region spaced inwardly, toward said deflector axis, relative to the region of said peripheral edge, the second said width of said second type slots being greater than the first said width of said second type slots.

Claim 11. (Original) The early suppression fast response pendent-type fire protection sprinkler of claim 9, wherein said first type length is equal to or greater than said second type length.

Claim 12. (Original) The early suppression fast response pendent-type fire protection sprinkler of claim 11, wherein said reentrant slot centerlines of said reentrant slots of said first type extend substantially radially outward from said deflector axis.

Claim 13. (Original) The early suppression fast response pendent-type fire protection sprinkler of claim 12, wherein said reentrant slot centerlines of said reentrant slots of said second type extend substantially radially outward from said deflector axis.

Claim 14. (Original) The early suppression fast response pendent-type fire protection sprinkler of claim 9, wherein said reentrant slots of said first type comprise at least two pairs of generally opposing reentrant slots.

Claim 15. (Original) The early suppression fast response pendent-type fire protection sprinkler of claim 9, wherein said reentrant slots of said second type comprise at least two pairs of generally opposing reentrant slots.

Claim 16. (Original) The early suppression fast response pendent-type fire protection sprinkler of claim 9, wherein said first type length of said reentrant slots of said first type is substantially the same.

Claim 17. (Original) The early suppression fast response pendent-type fire protection sprinkler of claim 9, wherein said second type length of said reentrant slots of said second type is substantially the same.

Claim 18. (Original) The early suppression fast response pendent-type fire protection sprinkler of claim 9, wherein said reentrant slots of said first type define reentrant portions having an elongated shape.

Claim 19. (Original) The early suppression fast response pendent-type fire protection sprinkler of claim 9, wherein said reentrant slots of said second type define reentrant portions having a pear-shape.

Claim 20. (Original) The early suppression fast response pendent-type fire protection sprinkler of claim 9, wherein a reentrant slot of said second type is located between reentrant slots of said first type.

Claim 21. Claims 21-35 (Canceled)

Claim 36. (Previously Presented) An early suppression fast response pendent-type fire protection sprinkler suitable for use in accordance with one or more of NFPA 13, NFPA 231 and NFPA 231C, to protect single row rack storage, double row rack storage and multiple row rack storage having a maximum storage height of 30 feet in a storage area having a maximum ceiling height of 35 feet, with no open containers and no solid shelves, said sprinkler having a K-factor

of about 25 and a minimum design flowing pressure of about 20 pounds per square inch, and less than about 45 pounds per square inch, at the most hydraulically remote sprinkler, and further comprising:

a sprinkler body defining an orifice and an outlet for delivering a flow of fluid from a source, and

a deflector mounted with a first surface opposed to flow of fluid from the outlet, said deflector defining at least two reentrant slots disposed in opposition about a deflector axis, said reentrant slots extending from said first surface through said deflector, and said reentrant slots extending from slot openings at an outer peripheral edge of said deflector inwardly from said peripheral edge toward said deflector axis.

Claim 37. (Previously Presented) An early suppression fast response pendent-type fire protection sprinkler suitable for use in accordance with one or more of NFPA 13, NFPA 231 and NFPA 231 C, to protect single row rack storage, double row rack storage and multiple row rack storage having a maximum storage height of 35 feet in a storage area having a maximum ceiling height of 40 feet, with no open containers and no solid shelves, said sprinkler having a K-factor of about 25 and a minimum design flowing pressure of about 25 pounds per square inch, and less than about 50 pounds per square inch, at the most hydraulically remote sprinkler, and further comprising:

a sprinkler body defining an orifice and an outlet for delivering a flow of fluid from a source, and

a deflector mounted with a first surface opposed to flow of fluid from the outlet, said deflector defining at least two reentrant slots disposed in opposition about a deflector axis, said reentrant slots extending from said first surface through said deflector, and said reentrant slots extending from slot openings at an outer peripheral edge of said deflector

inwardly from said peripheral edge toward said deflector axis.

Claim 38. (Previously Presented) An early suppression fast response pendent-type fire protection sprinkler suitable for use in accordance with one or more of NFPA 13, NFPA 231 and NFPA 231C, to protect single row rack storage, double row rack storage and multiple row rack storage having a maximum storage height of 40 feet in a storage area having a maximum ceiling height of 45 feet, with no open containers and no solid shelves, said sprinkler having a K-factor of about 25 and a minimum design flowing pressure of about 40 pounds per square inch, and less than about 65 pounds per square inch, at the most hydraulically remote sprinkler, and further comprising:

a sprinkler body defining an orifice and an outlet for delivering a flow of fluid from a source, and

a deflector mounted with a first surface opposed to flow of fluid from the outlet, said deflector defining at least two reentrant slots disposed in opposition about a deflector axis, said reentrant slots extending from said first surface through said deflector, and said reentrant slots extending from slot openings at an outer peripheral edge of said deflector inwardly from said peripheral edge toward said deflector axis.

Claim 39. (Previously Presented) An early suppression fast response pendent-type fire protection sprinkler suitable for use in accordance with one or more of NFPA 13, NFPA 231 and NFPA 231C, to protect single row rack storage, double row rack storage and multiple row rack storage having a maximum storage height of 25 feet in a storage area having a maximum ceiling height of 30 feet, with no open containers and no solid shelves, said sprinkler having a K-factor of about 25 or more and a minimum design flowing pressure of about 15 pounds per square inch,

and less than about 40 pounds per square inch, at the most hydraulically remote sprinkler, and further comprising:

a sprinkler body defining an orifice and an outlet for delivering a flow of fluid from a source, and

a deflector mounted with a first surface opposed to flow of fluid from the outlet, said deflector defining at least two reentrant slots disposed in opposition about a deflector axis, said reentrant slots extending from said first surface through said deflector, and said reentrant slots extending from slot openings at an outer peripheral edge of said deflector inwardly from said peripheral edge toward said deflector axis.

Claim 40. (Previously Presented) An early suppression fast response pendent-type fire protection sprinkler suitable for use in accordance with one or more of NFPA 13, NFPA 231 and NFPA 231 C, to protect single row rack storage, double row rack storage and multiple row rack storage having a maximum storage height of 30 feet in a storage area having a maximum ceiling height of 35 feet, with no open containers and no solid shelves, said sprinkler having a K-factor of about 25 or more and a minimum design flowing pressure of about 20 pounds per square inch, and less than about 45 pounds per square inch, at the most hydraulically remote sprinkler, and further comprising:

a sprinkler body defining an orifice and an outlet for delivering a flow of fluid from a source, and

a deflector mounted with a first surface opposed to flow of fluid from the outlet, said deflector defining at least two reentrant slots disposed in opposition about a deflector axis, said reentrant slots extending from said first surface through said deflector, and said reentrant slots extending from slot openings at an outer peripheral edge of said deflector inwardly from said peripheral edge toward said deflector axis.

Claim 41. (Previously Presented) An early suppression fast response pendent-type fire protection sprinkler suitable for use in accordance with one or more of NFPA 13, NFPA 231 and NFPA 231C, to protect single row rack storage, double row rack storage and multiple row rack storage having a maximum storage height of 35 feet in a storage area having a maximum ceiling height of 40 feet, with no open containers and no solid shelves, said sprinkler having a K-factor of about 25 or more and a minimum design flowing pressure of about 25 pounds per square inch, and less than about 50 pounds per square inch, at the most hydraulically remote sprinkler, and further comprising:

a sprinkler body defining an orifice and an outlet for delivering a flow of fluid from a source, and

a deflector mounted with a first surface opposed to flow of fluid from the outlet, said deflector defining at least two reentrant slots disposed in opposition about a deflector axis, said reentrant slots extending from said first surface through said deflector, and said reentrant slots extending from slot openings at an outer peripheral edge of said deflector inwardly from said peripheral edge toward said deflector axis.

Claim 42. (Previously Presented): An early suppression fast response pendent-type fire protection sprinkler suitable for use in accordance with one or more of NFPA 13, NFPA 231 and NFPA 231 C, to protect single row rack storage, double row rack storage and multiple row rack storage having a maximum storage height of 40 feet in a storage area having a maximum ceiling height of 45 feet, with no open containers and no solid shelves, said sprinkler having a K-factor of about 25 or more and a minimum design flowing pressure of about 40 pounds per square inch, and less than about 65 pounds per square inch, at the most hydraulically remote sprinkler, and further comprising:

a sprinkler body defining an orifice and an outlet for delivering a flow of fluid from a source, and

a deflector mounted with a first surface opposed to flow of fluid from the outlet, said deflector defining at least two reentrant slots disposed in opposition about a deflector axis, said reentrant slots extending from said first surface through said deflector, and said reentrant slots extending from slot openings at an outer peripheral edge of said deflector inwardly from said peripheral edge toward said deflector axis.

Claim 43. (Previously Presented) The early suppression fast response pendent-type fire protection sprinkler of claim 39, 40, 41, or 42, wherein said reentrant slots extend inwardly along reentrant slot centerlines, and each of said reentrant slots has a first width transverse to its reentrant slot centerline in a region of said peripheral edge and a second slot width transverse to its reentrant slot centerline in a region spaced inwardly, toward said deflector axis, relative to the region of said peripheral edge, said second width being greater than said first width.

Claim 44. (Previously Presented) The early suppression fast response pendent-type fire protection sprinkler of claim 43, further comprising an apex element and wherein said deflector is mounted to said apex element and wherein an innermost portion of each of said reentrant slots extends inwardly toward said deflector axis to be no further outward from said deflector axis that an outermost surface of said apex element.

Claim 45. (Previously Presented) The early suppression fast response pendent-type fire protection sprinkler of claim 44, wherein said innermost portions of said reentrant slots extend inwardly toward said deflector axis to underlie said apex element, relative to fluid flow direction from said outlet.

Claim 46. (Previously Presented) The early suppression fast response pendent-type fire protection sprinkler of claim 43, wherein said reentrant slot centerlines extend radially outward from said deflector axis.

Claim 47. (Previously Presented) The early suppression fast response pendent-type fire protection sprinkler of claim 39, 40, 41, or 42, wherein said sprinkler is suited for installation with said deflector disposed up to 18 inches below a ceiling.

Claim 48. (Previously Presented) The early suppression fast response pendent-type fire protection sprinkler of claim 39, 40, 41, or 42, wherein said deflector has a thickness measured from said first surface in the direction of fluid flow equal to or greater than about 0.06 inch.

Claim 49. (Previously Presented) The early suppression fast response pendent-type fire protection sprinkler of claim 39, 40, 41, or 42, wherein said reentrant slots comprise a plurality of reentrant slots, said plurality of reentrant slots comprising at least a first type of reentrant slots and a second type of reentrant slots,

reentrant slots of said first type extending from said first surface through said deflector with the slot openings at an outer peripheral edge of said deflector body, each of said reentrant slots of said first type extending inwardly from said peripheral edge, along the reentrant slot centerlines, generally toward said deflector axis, to a first type length,

reentrant slots of said second type extending through said deflector from said first surface, with the slot openings at said peripheral edge of said deflector body, each of said reentrant slots of said second type extending inwardly from said peripheral edge, along the reentrant slot centerlines, generally toward said deflector axis, to a second type length, and

the innermost portions of said reentrant slots of said first type extending inwardly toward said deflector axis to be no further outward from said deflector axis than the outermost surface of said apex element.

Claim 50. Claim 50 (Previously Presented): The early suppression fast response pendent-type fire protection sprinkler of claim 49, wherein:

each of said reentrant slots of said first type has a first width transverse to its slot centerline in a region of said peripheral edge and a second width transverse to its slot centerline in a region spaced inwardly, toward said deflector axis, relative to the region of said peripheral edge, the second said width of said first type slots being greater than the first said width of said first type slots, and

each of said reentrant slots of said second type has a first width transverse to its slot centerline in a region of said peripheral edge and a second width transverse to its slot centerline in a region spaced inwardly, toward said deflector axis, relative to the region of said peripheral edge, the second said width of said second type slots being greater than the first said width of said second type slots.

Claim 51. (Previously Presented) The early suppression fast response pendent-type fire protection sprinkler of claim 49, wherein said first type length is equal to or greater than said second type length.

Claim 52. (Previously Presented) The early suppression fast response pendent-type fire protection sprinkler of claim 51, wherein said reentrant slot centerlines of said reentrant slots of said first type extend substantially radially outward from said deflector axis.

Claim 53. (Previously Presented) The early suppression fast response pendent-type fire protection sprinkler of claim 52, wherein said reentrant slot centerlines of said reentrant slots of said second type extend substantially radially outward from said deflector axis.

Claim 54. (Previously Presented) The early suppression fast response pendent-type fire protection sprinkler of claim 49, wherein said reentrant slots of said first type comprise at least two pairs of generally opposing reentrant slots.

Claim 55. (Previously Presented) The early suppression fast response pendent-type fire protection sprinkler of claim 49, wherein said reentrant slots of said second type comprise at least two pairs of generally opposing reentrant slots.

Claim 56. (Previously Presented) The early suppression fast response pendent-type fire protection sprinkler of claim 49, wherein said first type length of said reentrant slots of said first type is substantially the same.

Claim 57. (Previously Presented) The early suppression fast response pendent-type fire protection sprinkler of claim 49, wherein said second type length of said reentrant slots of said second type is substantially the same.

Claim 58. (Previously Presented) The early suppression fast response pendent-type fire protection sprinkler of claim 49, wherein said reentrant slots of said first type define reentrant portions having an elongated shape.

Claim 59. (Previously Presented) The early suppression fast response pendent-type fire protection sprinkler of claim 49, wherein said reentrant slots of said second type define reentrant portions having a pear-shape.

Claim 60. (Previously Presented) The early suppression fast response pendent-type fire protection sprinkler of claim 49, wherein a reentrant slot of said second type is located between reentrant slots of said first type.

Claim 61. (Previously Presented) An early suppression fast response pendent-type fire protection sprinkler suitable for use in accordance with one or more of NFPA 13, NFPA 231 and NFPA 231C, to protect single row rack storage, double row rack storage and multiple row rack storage having a maximum storage height of 25 feet in a storage area having a maximum ceiling height of 30 feet, with no open containers and no solid shelves, said sprinkler having a minimum design flowing pressure of about 15 pounds per square inch, and less than about 40 pounds per square inch, at the most hydraulically remote sprinkler, and further comprising:

a sprinkler body defining an orifice and an outlet for delivering a flow of fluid from a source, and

a deflector mounted with a first surface opposed to flow of fluid from the outlet, said deflector defining at least two reentrant slots disposed in opposition about a deflector axis, said reentrant slots extending from said first surface through said deflector, and said reentrant slots extending from slot openings at an outer peripheral edge of said deflector inwardly from said peripheral edge toward said deflector axis.

Claim 62. (Previously Presented) An early suppression fast response pendent-type fire protection sprinkler suitable for use in accordance with one or more of NFPA 13, NFPA 231 and NFPA 231 C, to protect single row rack storage, double row rack storage and multiple row rack storage having a maximum storage height of 30 feet in a storage area having a maximum ceiling height of 35 feet, with no open containers and no solid shelves, said sprinkler having a

minimum design flowing pressure of about 20 pounds per square inch, and less than about 45 pounds per square inch, at the most hydraulically remote sprinkler, and further comprising:

a sprinkler body defining an orifice and an outlet for delivering a flow of fluid from a source, and

a deflector mounted with a first surface opposed to flow of fluid from the outlet, said deflector defining at least two reentrant slots disposed in opposition about a deflector axis, said reentrant slots extending from said first surface through said deflector, and said reentrant slots extending from slot openings at an outer peripheral edge of said deflector inwardly from said peripheral edge toward said deflector axis.

Claim 63. (Previously Presented) An early suppression fast response pendent-type fire protection sprinkler suitable for use in accordance with one or more of NFPA 13, NFPA 231 and NFPA 231 C, to protect single row rack storage, double row rack storage and multiple row rack storage having a maximum storage height of 35 feet in a storage area having a maximum ceiling height of 40 feet, with no open containers and no solid shelves, said sprinkler having a minimum design flowing pressure of about 25 pounds per square inch, and less than about 50 pounds per square inch, at the most hydraulically remote sprinkler, and further comprising:

a sprinkler body defining an orifice and an outlet for delivering a flow of fluid from a source, and

a deflector mounted with a first surface opposed to flow of fluid from the outlet, said deflector defining at least two reentrant slots disposed in opposition about a deflector axis, said reentrant slots extending from said first surface through said deflector, and said reentrant slots extending from slot openings at an outer peripheral edge of said deflector inwardly from said peripheral edge toward said deflector axis.

Claim 64. (Previously Presented) An early suppression fast response pendent-type fire protection sprinkler suitable for use in accordance with one or more of NFPA 13, NFPA 231 and NFPA 231 C, to protect single row rack storage, double row rack storage and multiple row rack storage having a maximum storage height of 40 feet in a storage area having a maximum ceiling height of 45 feet, with no open containers and no solid shelves, said sprinkler having a minimum design flowing pressure of about 40 pounds per square inch, and less than about 65 pounds per square inch, at the most hydraulically remote sprinkler, and further comprising:

a sprinkler body defining an orifice and an outlet for delivering a flow of fluid from a source, and

a deflector mounted with a first surface opposed to flow of fluid from the outlet, said deflector defining at least two reentrant slots disposed in opposition about a deflector axis, said reentrant slots extending from said first surface through said deflector, and said reentrant slots extending from slot openings at an outer peripheral edge of said deflector inwardly from said peripheral edge toward said deflector axis.

Claim 65. (Previously Presented) The early suppression fast response pendent-type fire protection sprinkler of claim 61, 62, 63, or 64, wherein said reentrant slots extend inwardly along reentrant slot centerlines, and each of said reentrant slots has a first width transverse to its reentrant slot centerline in a region of said peripheral edge and a second slot width transverse to its reentrant slot centerline in a region spaced inwardly, toward said deflector axis, relative to the region of said peripheral edge, said second width being greater than said first width.

Claim 66. (Previously Presented) The early suppression fast response pendent-type fire protection sprinkler of claim 65, further comprising an apex element and wherein said deflector

is mounted to said apex element and wherein an innermost portion of each of said reentrant slots extends inwardly toward said deflector axis to be no further outward from said deflector axis that an outermost surface of said apex element.

Claim 67. (Previously Presented) The early suppression fast response pendent-type fire protection sprinkler of claim 66, wherein said innermost portions of said reentrant slots extend inwardly toward said deflector axis to underlie said apex element, relative to fluid flow direction from said outlet.

Claim 68. (Previously Presented) The early suppression fast response pendent-type fire protection sprinkler of claim 65, wherein said reentrant slot centerlines extend radially outward from said deflector axis.

Claim 69. (Previously Presented) The early suppression fast response pendent-type fire protection sprinkler of claim 61, 62, 63, or 64, wherein said sprinkler is suited for installation with said deflector disposed up to 18 inches below a ceiling.

Claim 70. (Previously Presented) The early suppression fast response pendent-type fire protection sprinkler of claim 61, 62, 63, or 64, wherein said deflector has a thickness measured from said first surface in the direction of fluid flow equal to or greater than about 0.06 inch.

Claim 71. (Previously Presented) The early suppression fast response pendent-type fire protection sprinkler of claim 61, 62, 63, or 64, wherein said reentrant slots comprise a plurality of reentrant slots, said plurality of reentrant slots comprising at least a first type of reentrant slots and a second type of reentrant slots,

reentrant slots of said first type extending from said first surface through said deflector with the slot openings at an outer peripheral edge of said deflector body, each of said reentrant slots of said first type extending inwardly from said peripheral edge, along the reentrant slot centerlines, generally toward said deflector axis, to a first type length,

reentrant slots of said second type extending through said deflector from said first surface, with the slot openings at said peripheral edge of said deflector body, each of said reentrant slots of said second type extending inwardly from said peripheral edge, along the reentrant slot centerlines, generally toward said deflector axis, to a second type length, and

the innermost portions of said reentrant slots of said first type extending inwardly toward said deflector axis to be no further outward from said deflector axis than the outermost surface of said apex element.

Claim 72. (Previously Presented) The early suppression fast response pendent-type fire protection sprinkler of claim 71, wherein:

each of said reentrant slots of said first type has a first width transverse to its slot centerline in a region of said peripheral edge and a second width transverse to its slot centerline in a region spaced inwardly, toward said deflector axis, relative to the region of said peripheral edge, the second said width of said first type slots being greater than the first said width of said first type slots, and

each of said reentrant slots of said second type has a first width transverse to its slot centerline in a region of said peripheral edge and a second width transverse to its slot centerline in a region spaced inwardly, toward said deflector axis, relative to the region of said peripheral edge, the second said width of said second type slots being greater than the first said width of said second type slots.

Claim 73. (Previously Presented) The early suppression fast response pendent-type fire protection sprinkler of claim 71, wherein said first type length is equal to or greater than said second type length.

Claim 74. (Previously Presented) The early suppression fast response pendent-type fire protection sprinkler of claim 73, wherein said reentrant slot centerlines of said reentrant slots of said first type extend substantially radially outward from said deflector axis.

Claim 75. (Previously Presented) The early suppression fast response pendent-type fire protection sprinkler of claim 74, wherein said reentrant slot centerlines of said reentrant slots of said second type extend substantially radially outward from said deflector axis.

Claim 76. (Previously Presented) The early suppression fast response pendent-type fire protection sprinkler of claim 71, wherein said reentrant slots of said first type comprise at least two pairs of generally opposing reentrant slots.

Claim 77. (Previously Presented) The early suppression fast response pendent-type fire protection sprinkler of claim 71, wherein said reentrant slots of said second type comprise at least two pairs of generally opposing reentrant slots.

Claim 78. (Previously Presented) The early suppression fast response pendent-type fire protection sprinkler of claim 71, wherein said first type length of said reentrant slots of said first type is substantially the same.

Claim 79. (Previously Presented) The early suppression fast response pendent-type fire protection sprinkler of claim 71, wherein said second type length of said reentrant slots of said second type is substantially the same.

Claim 80. (Previously Presented) The early suppression fast response pendent-type fire protection sprinkler of claim 71, wherein said reentrant slots of said first type define reentrant portions having an elongated shape.

Claim 81. (Previously Presented) The early suppression fast response pendent-type fire protection sprinkler of claim 71, wherein said reentrant slots of said second type define reentrant portions having a pear-shape.

Claim 82. (Previously Presented) The early suppression fast response pendent-type fire protection sprinkler of claim 71, wherein a reentrant slot of said second type is located between reentrant slots of said first type.

Claim 83. (Previously Presented) An early suppression fast response fire protection sprinkler suitable for use in accordance with one or more of NFPA 13, NFPA 231 and NFPA 231C, to protect single row rack storage, double row rack storage and multiple row rack storage having a maximum storage height of 25 feet in a storage area having a maximum ceiling height of 30 feet, with no open containers and no solid shelves, said sprinkler having a minimum design flowing pressure of about 15 pounds per square inch, and less than about 40 pounds per square inch, at the most hydraulically remote sprinkler, and further comprising:

a sprinkler body defining an orifice and an outlet for delivering a flow of fluid from a source, and

a deflector mounted with a first surface opposed to flow of fluid from the outlet, said deflector defining at least two reentrant slots disposed in opposition about a deflector axis, said reentrant slots extending from said first surface through said deflector, and said reentrant slots

extending from slot openings at an outer peripheral edge of said deflector inwardly from said peripheral edge toward said deflector axis.

Claim 84. (Previously Presented) An early suppression fast response fire protection sprinkler suitable for use in accordance with one or more of NFPA 13, NFPA 231 and NFPA 231C, to protect single row rack storage, double row rack storage and multiple row rack storage having a maximum storage height of 30 feet in a storage area having a maximum ceiling height of 35 feet, with no open containers and no solid shelves, said sprinkler having a minimum design flowing pressure of about 20 pounds per square inch, and less than about 45 pounds per square inch, at the most hydraulically remote sprinkler, and further comprising:

a sprinkler body defining an orifice and an outlet for delivering a flow of fluid from a source, and

a deflector mounted with a first surface opposed to flow of fluid from the outlet, said deflector defining at least two reentrant slots disposed in opposition about a deflector axis, said reentrant slots extending from said first surface through said deflector, and said reentrant slots extending from slot openings at an outer peripheral edge of said deflector inwardly from said peripheral edge toward said deflector axis.

Claim 85. (Previously Presented) An early suppression fast response fire protection sprinkler suitable for use in accordance with one or more of NFPA 13, NFPA 231 and NFPA 231 C, to protect single row rack storage, double row rack storage and multiple row rack storage having a maximum storage height of 35 feet in a storage area having a maximum ceiling height of 40 feet, with no open containers and no solid shelves, said sprinkler having a minimum design

flowing pressure of about 25 pounds per square inch, and less than about 50 pounds per square inch, at the most hydraulically remote sprinkler, and further comprising:

a sprinkler body defining an orifice and an outlet for delivering a flow of fluid from a source, and

a deflector mounted with a first surface opposed to flow of fluid from the outlet, said deflector defining at least two reentrant slots disposed in opposition about a deflector axis, said reentrant slots extending from said first surface through said deflector, and said reentrant slots extending from slot openings at an outer peripheral edge of said deflector inwardly from said peripheral edge toward said deflector axis.

Claim 86. (Previously Presented) An early suppression fast response fire protection sprinkler suitable for use in accordance with one or more of NFPA 13, NFPA 231 and NFPA 231 C, to protect single row rack storage, double row rack storage and multiple row rack storage having a maximum storage height of 40 feet in a storage area having a maximum ceiling height of 45 feet, with no open containers and no solid shelves, said sprinkler having a minimum design flowing pressure of about 40 pounds per square inch, and less than about 65 pounds per square inch, at the most hydraulically remote sprinkler, and further comprising:

a sprinkler body defining an orifice and an outlet for delivering a flow of fluid from a source, and

a deflector mounted with a first surface opposed to flow of fluid from the outlet, said deflector defining at least two reentrant slots disposed in opposition about a deflector axis, said reentrant slots extending from said first surface through said deflector, and said reentrant slots extending from slot openings at an outer peripheral edge of said deflector inwardly from said peripheral edge toward said deflector axis.

Claim 87. (Previously Presented) The early suppression fast response fire protection sprinkler of claim 83, 84, 85, or 86, wherein said reentrant slots extend inwardly along reentrant slot centerlines, and each of said reentrant slots has a first width transverse to its reentrant slot centerline in a region of said peripheral edge and a second slot width transverse to its reentrant slot centerline in a region spaced inwardly, toward said deflector axis, relative to the region of said peripheral edge, said second width being greater than said first width.

Claim 88. (Previously Presented) The early suppression fast response fire protection sprinkler of claim 87, further comprising an apex element and wherein said deflector is mounted to said apex element and wherein an innermost portion of each of said reentrant slots extends inwardly toward said deflector axis to be no further outward from said deflector axis that an outermost surface of said apex element.

Claim 89. (Previously Presented) The early suppression fast response fire protection sprinkler of claim 88, wherein said innermost portions of said reentrant slots extend inwardly toward said deflector axis to underlie said apex element, relative to fluid flow direction from said outlet.

Claim 90. (Previously Presented) The early suppression fast response fire protection sprinkler of claim 87, wherein said reentrant slot centerlines extend radially outward from said deflector axis.

Claim 91. (Previously Presented) The early suppression fast response fire protection sprinkler of claim 83, 84, 85, or 86, wherein said sprinkler is suited for installation with said deflector disposed up to 18 inches below a ceiling.

Claim 92. (Previously Presented) The early suppression fast response fire protection sprinkler of claim 83, 84, 85, or 86, wherein said deflector has a thickness measured from said first surface in the direction of fluid flow equal to or greater than about 0.06 inch.

Claim 93. (Previously Presented) The early suppression fast response fire protection sprinkler of claim 83, 84, 85, or 86, wherein said reentrant slots comprise a plurality of reentrant slots, said plurality of reentrant slots comprising at least a first type of reentrant slots and a second type of reentrant slots,

reentrant slots of said first type extending from said first surface through said deflector with the slot openings at an outer peripheral edge of said deflector body, each of said reentrant slots of said first type extending inwardly from said peripheral edge, along the reentrant slot centerlines, generally toward said deflector axis, to a first type length,

reentrant slots of said second type extending through said deflector from said first surface, with the slot openings at said peripheral edge of said deflector body, each of said reentrant slots of said second type extending inwardly from said peripheral edge, along the reentrant slot centerlines, generally toward said deflector axis, to a second type length, and

the innermost portions of said reentrant slots of said first type extending inwardly toward said deflector axis to be no further outward from said deflector axis than the outermost surface of said apex element.

Claim 94. (Previously Presented) The early suppression fast response fire protection sprinkler of claim 93, wherein:

each of said reentrant slots of said first type has a first width transverse to its slot centerline in a region of said peripheral edge and a second width transverse to its slot centerline

in a region spaced inwardly, toward said deflector axis, relative to the region of said peripheral edge, the second said width of said first type slots being greater than the first said width of said first type slots, and

each of said reentrant slots of said second type has a first width transverse to its slot centerline in a region of said peripheral edge and a second width transverse to its slot centerline in a region spaced inwardly, toward said deflector axis, relative to the region of said peripheral edge, the second said width of said second type slots being greater than the first said width of said second type slots.

Claim 95. (Previously Presented) The early suppression fast response fire protection sprinkler of claim 93, wherein said first type length is equal to or greater than said second type length.

Claim 96. (Previously Presented) The early suppression fast response fire protection sprinkler of claim 95, wherein said reentrant slot centerlines of said reentrant slots of said first type extend substantially radially outward from said deflector axis.

Claim 97. (Previously Presented) The early suppression fast response fire protection sprinkler of claim 96, wherein said reentrant slot centerlines of said reentrant slots of said second type extend substantially radially outward from said deflector axis.

Claim 98. (Previously Presented) The early suppression fast response fire protection sprinkler of claim 93, wherein said reentrant slots of said first type comprise at least two pairs of generally opposing reentrant slots.

Claim 99. (Previously Presented) The early suppression fast response fire protection sprinkler of claim 93, wherein said reentrant slots of said second type comprise at least two pairs of generally opposing reentrant slots.

Claim 100. (Previously Presented) The early suppression fast response fire protection sprinkler of claim 93, wherein said first type length of said reentrant slots of said first type is substantially the same.

Claim 101. (Previously Presented) The early suppression fast response fire protection sprinkler of claim 93, wherein said second type length of said reentrant slots of said second type is substantially the same.

Claim 102. (Previously Presented) The early suppression fast response fire protection sprinkler of claim 93, wherein said reentrant slots of said first type define reentrant portions having an elongated shape.

Claim 103. (Previously Presented) The early suppression fast response fire protection sprinkler of claim 93, wherein said reentrant slots of said second type define reentrant portions having a pear-shape.

Claim 104. (Previously Presented) The early suppression fast response fire protection sprinkler of claim 93, wherein a reentrant slot of said second type is located between reentrant slots of said first type.

Claim 105. (Currently Amended) An early suppression fast response pendent-type fire protection sprinkler suitable for use in accordance with one or more of NFPA 13, NFPA 231 and NFPA 231C, the sprinkler comprising:

a sprinkler body defining an orifice and an outlet that delivers a flow of fluid from a source, the sprinkler body having a K-factor of about 25 and a minimum design flowing pressure ranging from ~~of about~~ 15 pounds per square inch to [[~~, and less than about~~]] 40 pounds per square inch, at a most hydraulically remote sprinkler; and

a deflector including ~~mounted with~~ a first surface opposed to the flow of fluid from the outlet to deflect the flow of fluid to suppress a fire in at least one of a single row rack storage, double row rack storage and multiple row rack storage having a maximum storage height of 25 feet in a storage area having a maximum ceiling height of 30 feet, with no open containers and no solid shelves, the deflector defining at least two grouping of slots disposed about a deflector axis, each of the at least two grouping of slots having at least two slots, each of the slots in each of the at least two grouping of slots extending from the first surface through the deflector, and from slot openings at an outer peripheral edge of the deflector inwardly from the peripheral edge toward the deflector axis, each slot of one grouping of the at least two groupings of slots having a first width generally transverse to a first radial length extending perpendicular to the deflector axis, each slot of another grouping of the at least two groupings of slots having a second width different than the first width and generally transverse to a second radial length extending perpendicular to the deflector axis that is different than the first radial length.

Claim 106. (New) An early suppression fast response pendent-type fire protection sprinkler suitable for use in accordance with one or more of NFPA 13, NFPA 231 and NFPA 231C, the sprinkler comprising:

a sprinkler body defining an orifice and an outlet that delivers a flow of fluid from a source, the sprinkler body having a K-factor of about 25 and a minimum design flowing

pressure ranging from 20 pounds per square inch to 45 pounds per square inch, at a most hydraulically remote sprinkler; and

deflector including a first surface opposed to the flow of fluid from the outlet to deflect the flow of fluid to suppress a fire in at least one of a single row rack storage, double row rack storage and multiple row rack storage having a maximum storage height of 30 feet in a storage area having a maximum ceiling height of 35 feet, with no open containers and no solid shelves, the deflector defining at least two grouping of slots disposed about a deflector axis, each of the at least two grouping of slots having at least two slots, each of the slots in each of the at least two grouping of slots extending from the first surface through the deflector, and from slot openings at an outer peripheral edge of the deflector inwardly from the peripheral edge toward the deflector axis, each slot of one grouping of the at least two groupings of slots having a first width generally transverse to a first radial length extending perpendicular to the deflector axis, each slot of another grouping of the at least two groupings of slots having a second width different than the first width and generally transverse to a second radial length extending perpendicular to the deflector axis that is different than the first radial length.

Claim 107. (New) An early suppression fast response pendent-type fire protection sprinkler suitable for use in accordance with one or more of NFPA 13, NFPA 231 and NFPA 231C, the sprinkler comprising:

a sprinkler body defining an orifice and an outlet that delivers a flow of fluid from a source, the sprinkler body having a K-factor of about 25 and a minimum design flowing pressure ranging from 25 pounds per square inch to 50 pounds per square inch, at a most hydraulically remote sprinkler; and

a deflector including a first surface opposed to the flow of fluid from the outlet to deflect the flow of fluid to suppress a fire in at least one of a single row rack storage, double row rack storage and multiple row rack storage having a maximum storage height of 35 feet in a storage area having a maximum ceiling height of 40 feet, with no open containers and no solid shelves, the deflector defining at least two grouping of slots disposed about a deflector axis, each of the at least two grouping of slots having at least two slots, each of the slots in each of the at least two grouping of slots extending from the first surface through the deflector, and from slot openings at an outer peripheral edge of the deflector inwardly from the peripheral edge toward the deflector axis, each slot of one grouping of the at least two groupings of slots having a first width generally transverse to a first radial length extending perpendicular to the deflector axis, each slot of another grouping of the at least two groupings of slots having a second width different than the first width and generally transverse to a second radial length extending perpendicular to the deflector axis that is different than the first radial length.

Claim 108. (New) An early suppression fast response pendent-type fire protection sprinkler suitable for use in accordance with one or more of NFPA 13, NFPA 231 and NFPA 231C, the sprinkler comprising:

a sprinkler body defining an orifice and an outlet that delivers a flow of fluid from a source, the sprinkler body having a K-factor of about 25 and a minimum design flowing pressure ranging from 40 pounds per square inch to 65 pounds per square inch, at a most hydraulically remote sprinkler; and

a deflector including a first surface opposed to the flow of fluid from the outlet to deflect the flow of fluid to suppress a fire in at least one of a single row rack storage, double row rack storage and multiple row rack storage having a maximum storage height of 40 feet in a

storage area having a maximum ceiling height of 45 feet, with no open containers and no solid shelves, the deflector defining at least two grouping of slots disposed about a deflector axis, each of the at least two grouping of slots having at least two slots, each of the slots in each of the at least two grouping of slots extending from the first surface through the deflector, and from slot openings at an outer peripheral edge of the deflector inwardly from the peripheral edge toward the deflector axis, each slot of one grouping of the at least two groupings of slots having a first width generally transverse to a first radial length extending perpendicular to the deflector axis, each slot of another grouping of the at least two groupings of slots having a second width different than the first width and generally transverse to a second radial length extending perpendicular to the deflector axis that is different than the first radial length.

Claim 109. (New) The early suppression fast response pendent-type fire protection sprinkler of claim 105, 106, 107, or 108, wherein the at least two slots of each of the at least two grouping of slots define at least two reentrant slots.

Claim 110. (New) The early suppression fast response pendent-type fire protection sprinkler of claim 109, wherein each of the at least two reentrant slots extend inwardly along reentrant slot centerlines, and each of the at least two reentrant slots has a first width transverse to its reentrant slot centerline in a region of the peripheral edge and a second slot width transverse to its reentrant slot centerline in a region spaced inwardly, toward the deflector axis, relative to the region of the peripheral edge, the second width being greater than the first width.

Claim 111. (New) The early suppression fast response pendent-type fire protection sprinkler of claim 105, 106, 107, or 108, wherein the outlet defines an outlet axis and the sprinkler further comprises an apex element defining a curve in the direction of the outlet axis.

Claim 112. (New) The early suppression fast response pendent-type fire protection sprinkler of claim 105, 106, 107, or 108, wherein the sprinkler is suited for installation with the deflector disposed up to 18 inches below a ceiling.

Claim 113. (New) The early suppression fast response pendent-type fire protection sprinkler of claim 105, 106, 107, or 108, wherein the deflector has a thickness measured from the first surface in the direction of fluid flow equal to or greater than about 0.06 inch.

Claim 114. (New) The early suppression fast response pendent-type fire protection sprinkler of claim 105, 106, 107, or 108, wherein the outlet defines a longitudinal axis along the sprinkler body, the sprinkler further comprising an apex element aligned with the outlet axis, the deflector mounted to the apex element.

Claim 115. (New) The early suppression fast response pendent-type fire protection sprinkler of claim 114, the body further comprising a pair of arms mounted about the body, the arms joining at the apex element.

Claim 116. (New) The early suppression fast response pendent-type fire protection sprinkler of claim 114, further comprising a plate assembly to close the outlet and a thermally responsive element disposed between the outlet and the apex to support the plate.

Claim 117. (New) The early suppression fast response pendent-type fire protection sprinkler of claim 116, wherein the thermally responsive element comprises a fusible solder alloy.

Claim 118. (New) The early suppression fast response pendent-type fire protection sprinkler of claim 116, wherein the thermally responsive element has a temperature rating between 165 °F (74 °C) and 214 °F (101 °C).

Claim 119. (New) The early suppression fast response pendent-type fire protection sprinkler of claim 116, further comprising a strut and a lever to transfer a force from the thermally responsive element to the plate assembly, the sprinkler further comprising a threaded fastener engaged with the apex to coaxially support the lever.

Claim 120. (New) The early suppression fast response pendent-type fire protection sprinkler of claim 105, 106, 107, or 108, wherein the K-factor of the body is 25.2.

Claim 121. (New) The early suppression fast response pendent-type fire protection sprinkler of claim 105, 106, 107, or 108, wherein the first surface opposes the flow of fluid to deflect the flow of fluid to suppress a fire in the at least one of a single rack storage, double row rack storage, and multiple row rack storage, the at least one storage further includes portable storage.

Claim 122. (New) The early suppression fast response pendent-type fire protection sprinkler of claim 121, wherein at least one storage includes at least one of palletized and solid pile storage.

Claim 123. (New) The early suppression fast response pendent-type fire protection sprinkler of claim 122, wherein the at least one storage includes encapsulated or non-encapsulated materials.

Claim 124. (New) The early suppression fast response pendent-type fire protection sprinkler of claim 122, wherein the at least one storage includes cartoned unexpanded plastics.

Claim 125. (New) The early suppression fast response pendent-type fire protection sprinkler of claim 122, wherein the at least one storage includes at least one of Class I, Class II, Class III and Class IV commodities.

Claim 126. (New) The early suppression fast response pendent-type fire protection sprinkler of claim 122, wherein the at least one storage includes at least one of roll paper and rubber tires.

Claim 127. (New) The early suppression fast response pendent-type fire protection sprinkler of claim 107, wherein the minimum design flowing pressure is 40 pounds per square inch.

Claim 128. (New) The early suppression fast response pendent-type fire protection sprinkler of claim 108, wherein the maximum storage height is about 40 feet, the maximum ceiling height is about 45 feet, and the minimum design flowing pressure is 60 pounds per square inch.

Claim 129. (New) An early suppression fast response pendent-type fire protection sprinkler suitable for use in accordance with one or more of NFPA 13, NFPA 231 and NFPA 231C, the sprinkler comprising:

a sprinkler body defining an orifice and an outlet along a longitudinal axis that delivers a flow of fluid from a source, the sprinkler body having a K-factor of about 25 and a base having a pair of arms diametrically mounted about the base;

a plate assembly axially aligned and adjacent the outlet, and a thermally responsive element supporting the plate assembly to close the outlet;

an apex element disposed along the longitudinal axis, the pair of arms being joined at the apex element, the apex element defining a curve in the direction of the longitudinal axis;

a deflector affixed to the apex element, the deflector including a first surface opposed to the flow of fluid from the outlet, the deflector defining at least two grouping of slots disposed about a deflector axis, each of the at least two grouping of slots having at least two slots, each of the slots in each of the at least two grouping of slots extending from the first

surface through the deflector, and from slot openings at an outer peripheral edge of the deflector inwardly from the peripheral edge toward the deflector axis, each slot of one grouping of the at least two groupings of slots having a first width generally transverse to a first radial length extending perpendicular to the deflector axis, each slot of another grouping of the at least two groupings of slots having a second width different than the first width and generally transverse to a second radial length extending perpendicular to the deflector axis that is different than the first radial length, wherein the first surface being configured to deflect the flow of fluid to suppress a fire in at least one of a single row rack storage, double row rack storage, multiple row rack storage and portable row rack storage having a maximum storage height in a storage area having a maximum ceiling height, with no open containers and no solid shelves, the body having a minimum design flowing pressure measured in pounds per square inch at a most hydraulically remote sprinkler for the given maximum storage height and the maximum ceiling height,

wherein when the maximum storage height is about 35 feet and the maximum ceiling height is about 40 feet, the minimum design flowing pressure ranging from 25 pounds per square inch to 50 pounds per square inch, and

wherein when the maximum storage height is about 40 feet and the maximum ceiling height is about 45 feet, the minimum design flowing pressure ranging from 40 pounds per square inch to 65 pounds per square inch.

Claim 130. (New) The early suppression fast response pendent-type fire protection sprinkler of claim 129, wherein the at least two slots of each of the at least two grouping of slots define at least two reentrant slots.

Claim 131. (New) The early suppression fast response pendent-type fire protection sprinkler of claim 130, wherein each of the at least two reentrant slots extend inwardly along reentrant slot centerlines, and each of the at least two reentrant slots has a first width transverse to its reentrant slot centerline in a region of the peripheral edge and a second slot width transverse to its reentrant slot centerline in a region spaced inwardly, toward the deflector axis, relative to the region of the peripheral edge, the second width being greater than the first width.

Claim 132. (New) The early suppression fast response pendent-type fire protection sprinkler of claim 129, wherein when the maximum storage height is about 35 feet and the maximum ceiling height is about 40 feet, the minimum design flowing pressure being 40 pounds per square inch.

Claim 133. (New) The early suppression fast response pendent-type fire protection sprinkler of claim 129, wherein when the maximum storage height is about 40 feet and the maximum ceiling height is about 45 feet, the minimum design flowing pressure being 60 pounds per square inch.

Claim 134. (New) The early suppression fast response pendent-type fire protection sprinkler of claim 129, wherein the sprinkler is suited for installation with the deflector disposed up to 18 inches below a ceiling.

Claim 135. (New) The early suppression fast response pendent-type fire protection sprinkler of claim 129, wherein the deflector has a thickness measured from the first surface in the direction of fluid flow equal to or greater than about 0.06 inch.

Claim 136. (New) The early suppression fast response pendent-type fire protection sprinkler of claim 129, wherein the K-factor of the sprinkler body is 25.2.

Claim 137. (New) The early suppression fast response pendent-type fire protection sprinkler of claim 129, wherein the apex element includes a central bore having a threaded fastener disposed therein, the sprinkler further comprising a lever and strut engaged with the thermally responsive element to support the thermally responsive element, the threaded fastener further engaging the lever and strut along the longitudinal axis.